

Draft

## **Frequently Asked Questions**

### **Questions about the ICT4SIDS Partnership**

#### **Q1: What is the ICT4SIDS Partnership**

The ICT4SIDS Partnership is a UN-SIDS Registered Partnership (Registration No: 2765) that was proposed and presented during the Third International Conference on Small Island Developing States (SIDS), in Apia, 1-4 September 2014.

The partnership is centered around the participating islands that select projects of high value to them. We focus on producing results by using the capabilities of the partners in academia, UN organizations, and industries (see figure).

The main objective of ICT4SIDS Partnership is to accelerate the Samoa Pathway and UN Post 2015 Agenda

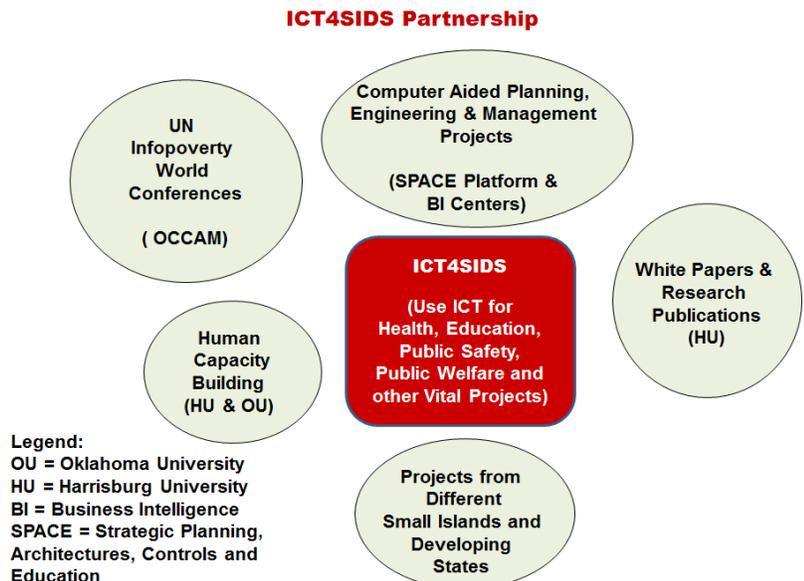
through ICT. In particular, we strongly support the Section 109 of the [Samoa Pathway Call for Action](#). A detailed analysis of how ICT4SIDS Partnership supports the Capacity Building goals stated in Section 109 can be found in the [ICT4SPACE-Samoa Pathway](#).

Extensive information about the ICT4SIDS Partnership can be found at the website ([www.ict4sids.com](http://www.ict4sids.com)).

#### **Q2: What is an ICT4SIDS Pilot Project**

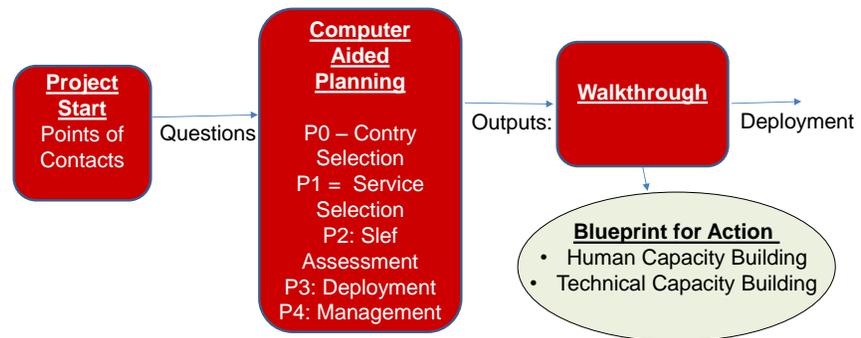
The goal of ICT4SIDS pilot projects is to accelerate adoption of Samoa Pathway and UN Post 2015 Agenda through ICT. The Pilot is:

- Short range (3 to 6 months long) and does not involve any cost
- We use a powerful computer aided advising environment, called SPACE (Strategic Planning, Architectures, Controls and Education) as shown in figure.
- SPACE reduces the time and cost of deploying ICT services by 70%.
- The main objective of the Pilot Project is to quickly conduct a comprehensive feasibility study that otherwise may take several weeks or months to complete. Exhibit1 explains the outputs produced by SPACE.



- A very important feature is that SPACE automatically produces a sample prototype that can be quickly converted to an actual working system.
- SPACE can quickly help launch high impact ICT services in health, education, public safety, public welfare, and other vital sectors for the vulnerable states.

The main steps of our approach are discussed below. To launch your own Pilot Project, please fill in the blanks and we will help you get started.



The pilot projects follow the following simple approach:

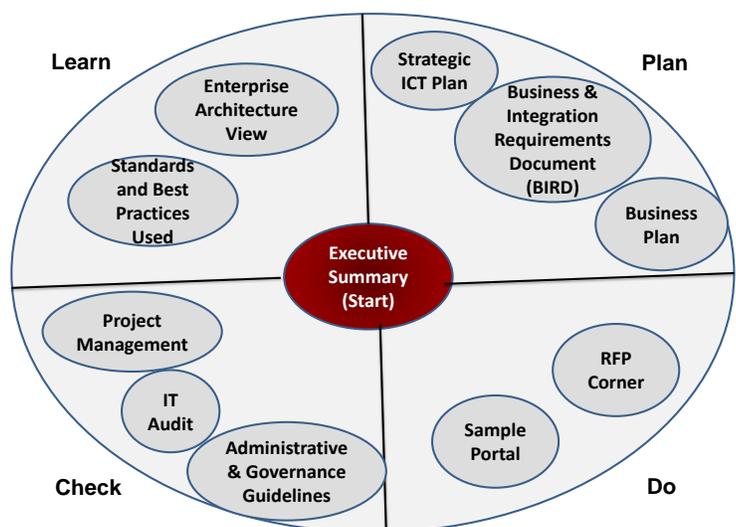
- We ask the customers to identify a point of contact (POC) who will lead the ICT4SIDS in the island.
- The POC works with us to identify projects of high value.
- We initiate a joint pilot project which may result in formation of a Center or Centers at a local level.
- The project concludes with a walkthrough
- No money exchanges hands for the duration of the pilot project.

### Q3: What does an ICT4SIDS Pilot Project Produce (i.e., what are the outputs)

The Pilot Projects focus on high quality feasibility studies that are completed within an hour by using SPACE – a computer aided advising tool. Our objective is to provide a comprehensive feasibility analysis that covers the entire Learn-Plan-Do-Check cycle that can serve as a massive checklist and guidelines for diverse stake holders (corporate management, customers, project managers, funding organizations, system analysts, developers, and enterprise architects).

To address this challenge, we adopted the Checklist Manifesto by Gawande<sup>1</sup> (i.e., checklist is a very powerful tool for successful execution of projects). The outputs generated, displayed graphically below, cover the entire Learn-Plan-Do-Check cycle and serve as a massive checklist that can help the users to succeed. These outputs are produced *in less than an hour (it takes almost 5-6 months to produce similar outputs manually)*. A user of the SPACE Environment selects a service (e.g., mobile health clinic) for a given country (e.g., Tonga) and generates the following outputs:

- Strategic Planning Report that shows the overall vision and architecture with business/technical justification
- Requirements documents for system development
- Business plans that can be used to obtaining funding



<sup>1</sup> Gawande, Atul, “The Checklist Manifesto: How to Get Things Right”, Picador publishing 2011

- Standardized RFPs (Requests for Proposals) that can be used to attract vendors for bidding
- Project management, policies and procedures, disaster recovery and needed governance guidelines
- Education, training and public awareness campaigns needed for success
- Enterprise architecture (EA) views for overall governance
- Suggested standards and best practices

#### Q4: How much does a Pilot Project Cost

All ICT4SIDS Pilot Projects are free for a normal duration of 3-6 months. After 6 months the project may be cancelled or continued on a weekly cost basis.

#### Q5. How is the Partnership being Used

Our focus is on capacity building

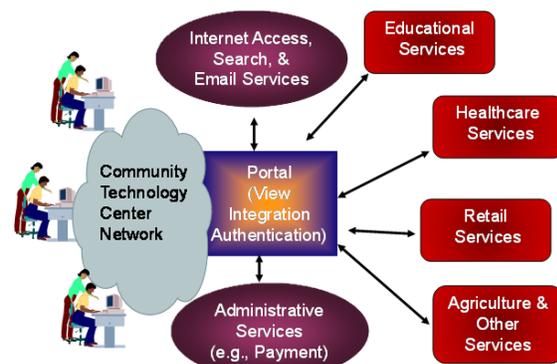
- Human capacity building through educational programs for ICT Leaders (see [CITO Program](#)).
- Technical capacity building through a Computer Aided Advisory. See Platform called [SPACE](#) that can help in rapid deployment of ICT hubs for SIDS.
- Pilot projects that provide a mixture of the human and technical capacity building.

Currently we have developed an ICT4SIDS Center that provides human and capacity building (e.g., training) and technical QW5. capacity building (e.g., quickly enabling vital ICT services).

Most of our current work with SIDS is focusing on launching Digital Services Centers (DSCs) in rural areas. A DSC is typically a small building (2-3 rooms) with good internet connectivity in a rural area that provides services of value to the community. DSCs provide a single level entry portal for Government to Citizen and Government to Business services. Objective of these centers would be to provide high impact, citizen centric, ethical, efficient and effective services in health, education, public safety, public welfare and other vital sectors.

The DSCs provide non-discriminatory delivery of all services to citizens and businesses located in rural areas. A good example of a DSC is eSeva in India and community centers in different parts of Asia. These DSCs can serve as the ICT hubs envisioned by the Samoa Pathway and can provide the following list of services in rural areas (see figure for a Conceptual View of DSC):

- Business Intelligence (BI) Service
- E-agriculture
- Eservices for Food Safety
- Fishery Distribution (Supply Chain)
- Tourism Services
- Distance Education
- E-learning for the physically-Handicapped
- Telemedicine
- Disaster Management Service



Legend: Bubbles indicate individual services, boxes represent sectors (e.g., health) that may themselves be portals or portlets.

- Weather Alert and Travel Warning

For additional details, see [Examples/Case Studies](#) and [Samples Sections](#).

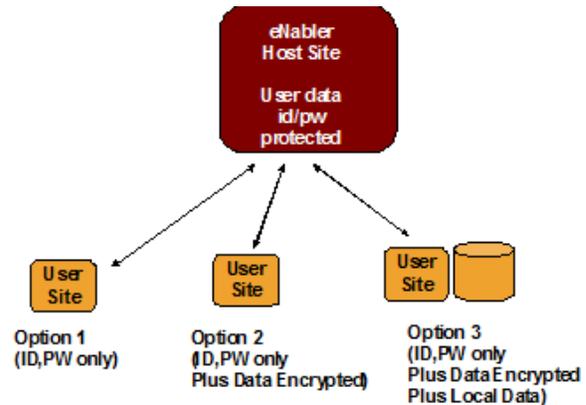
### Q6: What is the Quality of Data Used and Can it be Over-ridden

We use extensive amount of data (Big Data) from highly reliable sources such as the World Bank Open Data Institute, UN Department of Statistics, World Economic Forum and others.

We fully understand that some reliable data about SIDS can be only provided by the SIDs. Keeping this in mind, we allow the users to over-ride the standard data with the data supplied by the users. However, this data is only used for the duration of the session. For permanent replacement, the governance process described later is used.

### Q7: How will the Security and Privacy of the Data be managed

The SPACE is offered to ICT4SIDS members as a SaaS (Software as a Service) model where the users access the remotely located Advisory Services through a Web Browser. Most of the SPACE resources are informational and do not require any ID-Pw. However, the Planner is ID-PW protected to allow users to develop their own private plans. Users of the Planner have the following options, displayed below:



- **Option 1 (ID-PW Only):** The remotely hosted data is only accessed by the user with appropriate ID-PW.
- **Option 2 (ID-PW Plus Encrypted Data):** The remotely hosted data is also encrypted so that it can be only accessed by the user with appropriate ID-PW and encryption key. This option protects the remotely hosted data to be compromised.
- **Option 3 (ID-PW Plus Encrypted Data Plus Local Data):** In addition to the remotely hosted data that is encrypted and also ID-PW protected, this option allows the highly sensitive data to be only reside at the user site. This option assures that the sensitive data is not stored remotely and is only available at the user site. .

### Q8: Do you Provide Training

Yes, we offer a Certificate for IT Officials through our academic partners. This Online Program is intended to educate IT Officials (ITOs) in the public as well as private sectors especially in the underserved segments. The Program consists of a series of short online courses that emphasize the use of emerging technologies in eGovernment, eBusiness, eHealth, eAgriculture and eSafety. Comprehensive online resources will be used for hands-on experiments and investigations. The attendees will be able to lead the ICT initiatives by using the resources provided by the Program. See the [Training Program Section](#).

### Q9: How is the Plan Generated be Checked and Maintained for Quality

The Planner generates extensive reports that include project plans, requirements documents, technical specifications, and RFPs (Request for Proposals). These reports contain a mixture: of generic and customized information that is based on best practices and standards. This adherence to standards assures the quality of the plans generated. To assure further accuracy, the outputs of the planner are reviewed by local experts. These experts check and verify the content of the outputs before use.

The Strategic Planner uses a wide range of tools, techniques and standards in all phases, as shown in the following table. The main phases of the planner (P0, P1, P2, P3, P4) are displayed in column 1, the main activities (steps) in each phase are shown in column 2, and the main tools, techniques, and standards used in each step are listed in column 3.

Planning Phases	Activities Performed	Tools, Techniques & Standards Used
<b>P0 (Government Modeler) Choose a Country and create a Government Pattern</b>	S1: Define the country Profile and specify the level of use for the ICT	Fetch and use various indicators from sources such as World Economic Forum, UNPAN, ITU
	S2: Create a government pattern for the chosen country	Use the Patterns Repository to fetch and display a generic government pattern
	S3: Customize the pattern based on user inputs	Defaults for the patterns are based on external data sources
<b>P1 (Initializer): Choose an Area (Domain) and Do Information Gathering</b>	S1; Define a service in different areas that support the MDGs (e.g., healthcare, education, economic development)	The services are based on the government pattern and use the ITIL ITIL (IT Infrastructure Library: <a href="http://www.itil-officialsite.com">www.itil-officialsite.com</a> )
	S2: Get general information, educational resources and best practices	Extensive literature from diverse sources is accessed and displayed.
	S3: Do a self assessment of the PMO (present method of operation) and FMO (Future Method of Operation)	Uses the Capability Maturity Model (CMM) measures (0 to 5) for assessment.
<b>P2 (Strategic Planning): High Level Planning (Management Focus)</b>	Cost-benefits tradeoffs	Uses the McFarland Model
	Strategic analysis (buy, rent, outsource)	Uses an intuitive decision model based on time, in-house expertise,
	Policies and procedures needed for the service	Policies from different sources are fetched and displayed. Oracle Policy Automation
	Business processes needed	The Open Group Architecture Framework (TOGAF), Zackman model and US-FEA (Federal Enterprise Architecture)
	Technologies (apps, platforms, networks)	OAG (Open Application Group -Website: <a href="http://www.oag.org">www.oag.org</a> , TOGAF, W3C ( <a href="http://www.w3c.org">www.w3c.org</a> ), Cisco guidelines
Security & business continuity planning	SSI (System Security Institute), and ISO 9000 (for quality mgmt)	

	Project Management & Governance	PMBOK (Project Management Book of Knowledge) by Proj Mgmt In.(PMI) COBIT (Control Objectives for Information), CMMI (Capability Maturity Model Integration)
	Interoperability and Integration Considerations	SOA, SPOCS(large European initiative for interoperability – <a href="http://www.eu-spocs.eu/">http://www.eu-spocs.eu/</a> )
<b>P3 (Detailed Planner): (Technology Focus) -- Through Simulations</b>	Consolidated Report that shows: - Summary of the interactions - Requirements (RFP) format - Standards used (with explanations)	Requirements document is based on IIBA ((International Institute of Business Analysis): Website: <a href="http://www.theiiba.org">www.theiiba.org</a> )
	Detailed Planning & Implementation Tools	Games, simulations, planning tools,
<b>P4: Monitoring and Control (Quality Focus)</b>	Detailed project management for monitoring and controls with quality focus	PMBOK (Project Management Book of Knowledge) by Proj Mgmt In.(PMI) COBIT (Control Objectives for Information), CMMI (Capability Maturity Model Integration)

**Q10: What is the Governance Structure in the ICT4SIDS Project**

Proper governance is needed to define the roles and responsibilities of various players (e.g., UN, government agencies, international organizations such as the Red Cross, inter-governmental agencies, private sector, NGOs and the Civil Society) . We are in the process of developing the most appropriate governance.

**Q11: How is the SPACE Environment Managed?**

SPACE (its content plus its tools) has been developed and is being managed by a startup -- NGE Solutions, Inc. NGE use a “User Centered” design approach, thus the users drive SPACE and assure its success. We aggressively use a continued quality improvement approach that goes through the quality planning, quality assurance and quality control iterations on a regular basis (see the figure below). More information on this topic can be found in the literature (see reference below).

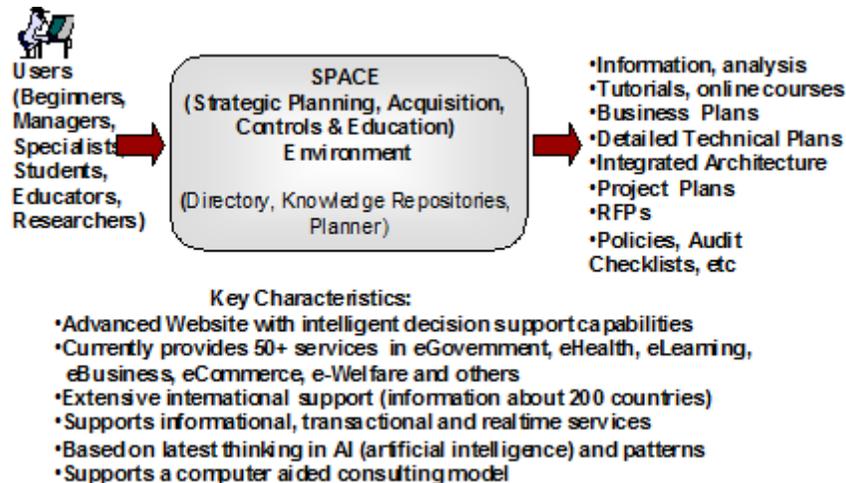


Reference: “Project Quality Management: Why, What and How”, by Kenneth H. Rose, Publisher: J. Ross Publishing (June 29, 2005).

## Questions about SPACE (Strategic Planning, Architecture, Controls and Education) -- the Computer Aided Advising Environment

### Q1: What is the SPACE Environment

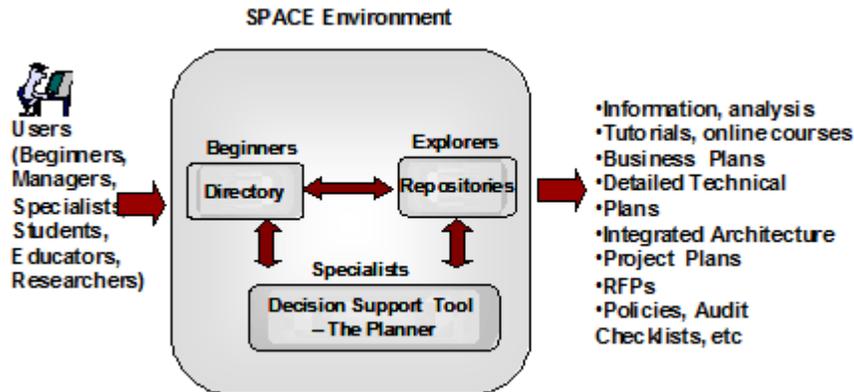
The Computer Aided Strategic Planning, Environment helps the users launch and manage their e-government and ebusiness initiatives without duplication of effort. The following figure presents a high level view of the Planning Environment. This Environment is based on the UN-GAID eNabler Project and thus fully supports, but is not restricted to, the MDGs (Millennium Development Goals).



### Q2: What does SPACE Really Do?

The Planning Environment is a “one-stop shop” that attempts to support the entire Learn-Plan-Do-Check cycle. This Environment, as shown below, that provides extensive informational, educational and management resources by using a) a Directory for beginners, b) a set of Knowledge Repositories for the explorers and c) a Planner for the specialists. Specifically:

- The users can range from beginners to specialists who can use the Directory for quick reference, the Knowledge Repositories for educational materials and case studies, and the Decision Support Tool (The Planner) for systematic guidance through a complete Learn-Plan-Do-Check process. .
- The users select a service from the healthcare, education, economic development, and public welfare sectors for a particular country and quickly produce very detailed and highly customized plans and informational resources as shown in the following figure.
- This Environment supports the users through the entire Learn-Plan-Do-Check cycle instead of focusing on one aspect only. Designed for developing countries and developing segments of developed countries, this Environment is being used very effectively to educate as well as assist the governments and NGOs (Non Government Organizations) of developing countries to accelerate progress in a large number of e-initiatives.



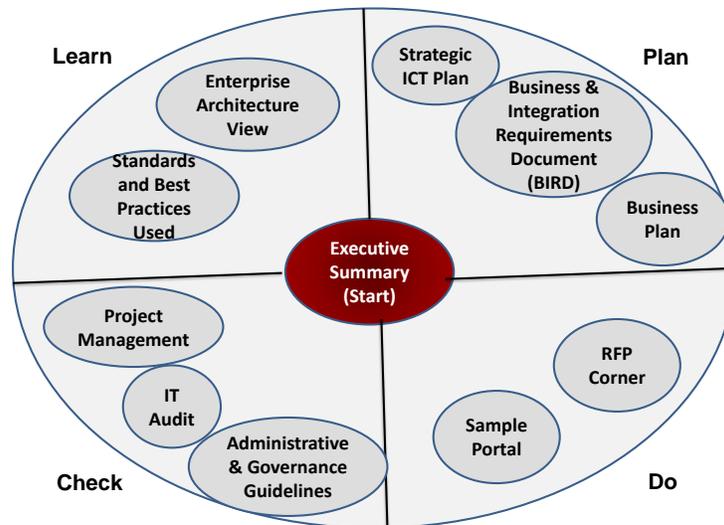
### Q3: What does SPACE Produce (i.e., what are the outputs)

A user of the SPACE Environment selects a service (e.g., mobile health clinic) for a given country (e.g., Nepal) and generates the following outputs:

- Strategic Planning Report that shows the overall vision and architecture with business/technical justification
- Requirements documents for system development
- Business plans that can be used to obtaining funding
- Standardized RFPs (Requests for Proposals) that can be used to attract vendors for bidding
- Project management, policies and procedures, disaster recovery and needed governance guidelines
- Education, training and public awareness campaigns needed for success
- Enterprise architecture (EA) views for overall governance
- Suggested standards and best practices

These outputs, displayed graphically below, cover the entire Learn-Plan-Do-Check cycle, are produced *in less than an hour (it takes almost a year to produce similar outputs manually)*.

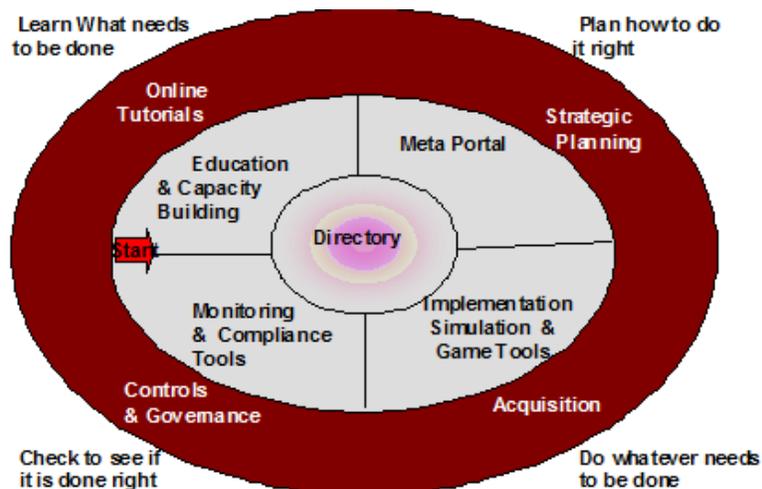
As indicated by Gawande [1] in his best selling book “The Checklist Manifesto: How to Get Things Right”, a checklist is a very powerful tool for successful execution of projects. The information contained in these reports can serve as a massive checklist that can help the users to succeed.



#### Q4: Does Support the Entire Learn-Plan-Do-Check Cycle?

The Lean-Plan-Do-Check cycle, displayed in the following figure, was introduced by Demming for Continuous Quality Improvement. It has been used for several years to develop new systems and improve the existing ones. The idea of **Learn** what needs to be done, **Plan** how to do it right, **Do** whatever needs to be done, and **Check** to see if it is done right is common in disciplines such as continuous quality improvements. The SPACE Environment supports the users through the entire Learn-Plan-Do-Check cycle by using the following capabilities:

- **The Directory** (the core) provides a quick reference and overview of the Environment for the beginners
- **The Knowledge Repositories** (the middle circle) expose the users to educational materials, case studies, and examples needed throughout the cycle
- **The Decision Support Tool -- The Planner** (the outer circle) goes beyond documents and actually walks the users through various decisions in strategic planning, acquisition, controls and education/training.



The unique features of SPACE are:

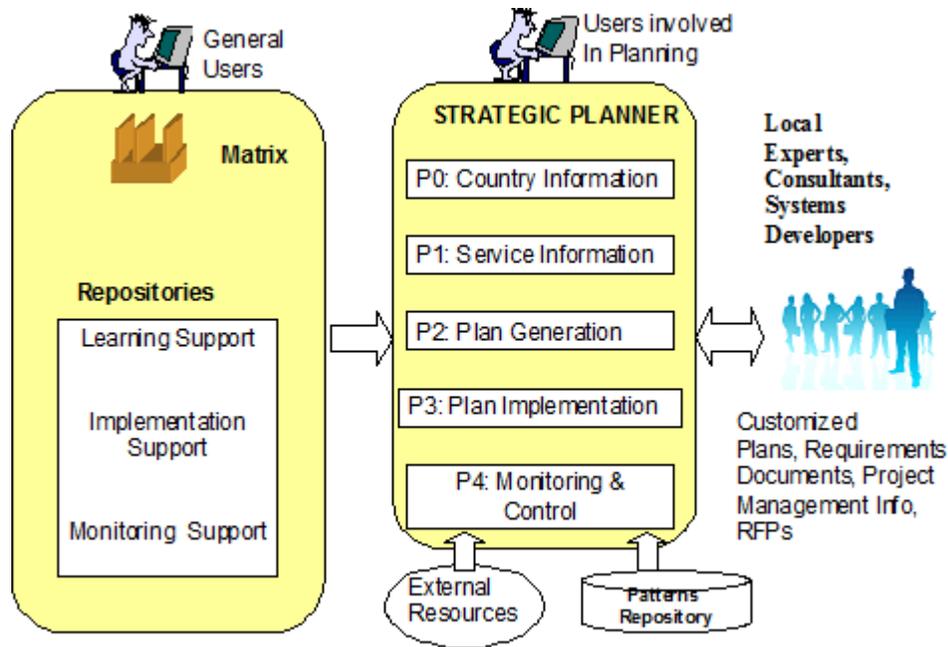
- It is specifically designed for underserved segments – our main area of focus
- It is intended for a global marketplace – we capture almost 80 parameters about 200 countries and use these parameters to create highly customized and detailed plans.
- It addresses the entire Learn-Plan-Do-Check cycle and produces a very detailed planning report that can be used as a very effective checklist
- Use of the Environment results in significant reduction of time (from 4-5 months to 2-3 days) and rapid replication of best practices and standardized operations throughout its user community
- It is very customer focused – almost all of our services provide high impact (e.g., mobile health clinics, information exchange between agencies, entrepreneurship and educational networks)

### **Q5: How is SPACE used in practice**

Most of the developing countries are re-inventing the wheel in their efforts to launch e-government initiatives. For example, an official involved in launching an eservices for healthcare faces many questions: “how do I understand the basic issues, policies, and approaches”, “how do I develop a customized plan that is specific to my country”, “how do I successfully execute the developed plan”, “how do I monitor and evaluate the progress being made”, and “how do I do everything without re-inventing the wheel - what tools and solutions are available out there that I could use?” The official wonders if there is a “one-stop shop” where one could find answers to all such questions. SPACE provides such a one stop-shop where a user can discover, plan, and manage services such as the following:

- online course delivery
- an entrepreneurship portal
- a health information network
- an emergency response unit to be used by a city government
- document exchanges between different government agencies
- broadband network
- social network for government services

The key player is the Planner that covers five phases (P0 to P4), shown in the following figure. The first two phases (P0 and P1) capture country and service specific information. Phase 2 generates a customized plan based on P0 and P1. P3 supports execution of the plan and phase P4 supports monitoring and control with heavy emphasis on project management and quality controls. The Planner generates extensive reports that include project plans, requirements documents, technical specifications, and RFPs (Request for Proposals). These reports contain a mixture: of generic and customized information. The generic information captures common best practices (e.g., security), the country/ region specific information is customized by using the factors published by the World Economic Forum ([www.weforum.org](http://www.weforum.org)), and service specific information by using business patterns.



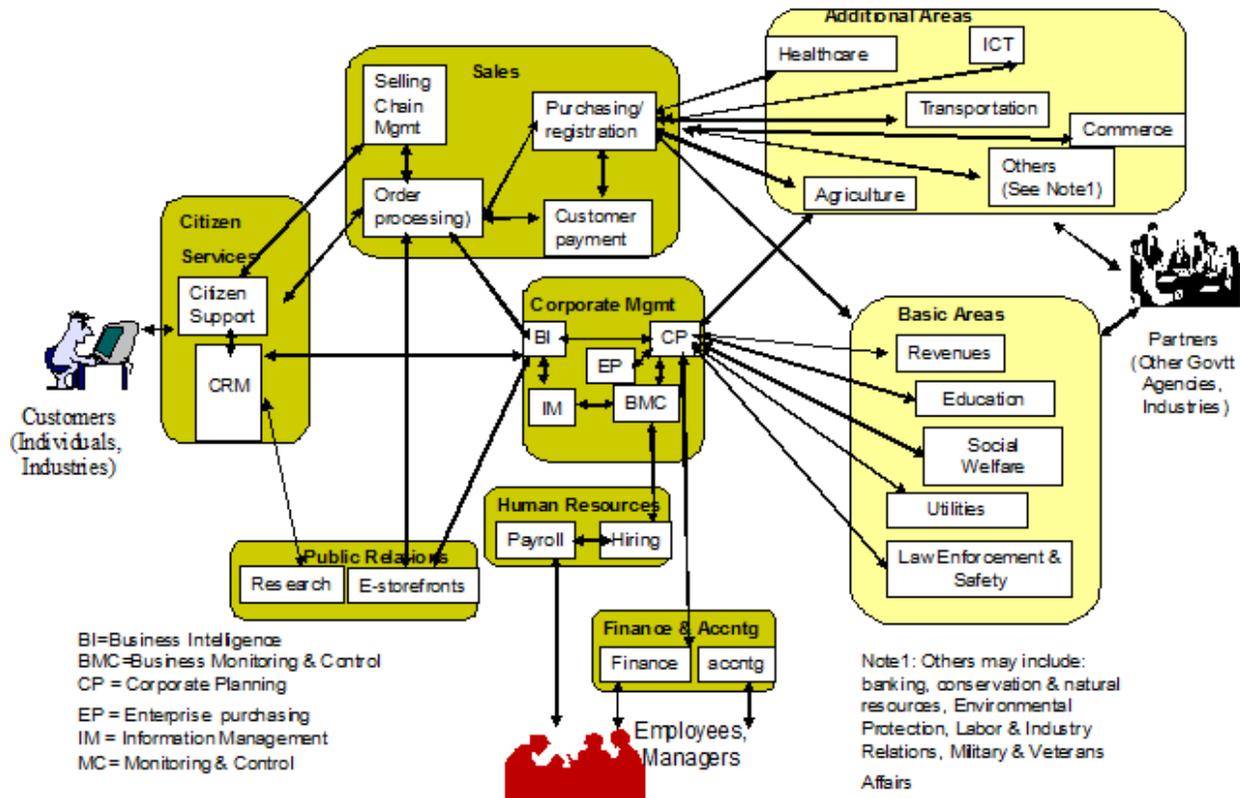
#### Q6: How will the needed content be created and updated quickly

We heavily use patterns to create content quickly. Simply stated, a pattern represents core knowledge that can be specialized for different situations. Thus instead of loading the data for governments of almost 200 countries, we represent the core knowledge that is common to all governments. For example, the following diagram shows a “Government Pattern” that, once created, can be customized and specialized for different countries. Patterns are quite useful because they represent a common library of artifacts that experienced professionals are likely to see over and over again.

To update the data quickly, we use learning techniques. For example, instead of manually gathering and maintaining the information, we employ intelligent agents that retrieve data and update when needed. At the core of STRAP is an extensive knowledgebase (KB) that contains best practices, patterns, and rules needed to address various areas of interest in education, healthcare, and economy. A great deal of literature on patterns and intelligent decision making has been published (see references below).

#### References:

- [1] Adams, J., et al, *Patterns for e-Business: A Strategy for Reuse*, IBM Press, October 2001.
- [2] Umar, A., “Intelligent Decision Support for Architectures and Integration of Next Generation Enterprises”, *Informatics*, V. 31, No. 14, pp. 141-150., 2007
- [3] Umar, A., and Zordan, A., “Enterprise Ontologies for Planning and Integration of eBusiness”, *IEEE Transactions on Engineering Management*, May 2009, Vol. 56, No. 2, pp. 352-371.
- [4] Umar, A. and Zordan, A., “Integration Versus Migration Issues in Service-Oriented Architectures”, *Journal of Systems and Software*, Vol. 28, 2009b, pp. 448-462.

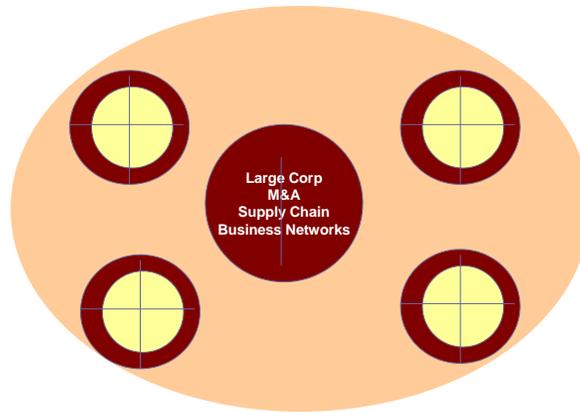


### Q7: How can a larger system be developed from smaller ones

The Planner can be used to represent large and more complex services that include multiple agencies and organizations. The Planner provides a “Composer” that takes different scenarios and services and composes them into larger and more complex services such as the following (see figure):

- A document exchange s between different government agencies
- A B2B marketplace with numerous buyers and sellers
- A supply chain system consisting of several consumers and suppliers
- A government/business network such as a health information network (HIN)

The Planner treats each service developed in a session as an individual service (a reusable component) and composes large and complex services from these components by using SOA (Service Oriented Architectures). It handles the integration and interoperability between systems and suggests approximate configurations with details about the infrastructure components needed. The type of configurations and infrastructure components needed depend on the organizational composition and other parameters such as the number of participants (organization units), volume of transaction handled by the composition, value of transactions handled, security and trust level between the partners, etc. For example, the collaboration between partners in a supply chain require higher security than units of a large organization.



**Q12: How is SPACE different from other Websites**

Our goal is to go beyond the websites that contain marketing materials or portals that serve as document repositories with search capabilities or software development sites that house a collection of disconnected tools. Instead of duplicating existing websites and portals, we provide a comprehensive set of capabilities that cover the entire “Learn-Plan-Do-Check” cycle to solve a wide range of problems (see the following figure). The capabilities, as shown on the left side of the figure, range from simple document search and display tools to planning and control services. These capabilities are needed to deal with simple informational queries to complex problems with many steps (shown on the right side of the figure).

